Surgical therapy for pilonidal sinus in adolescents: a retrospective study

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ABSTRACT

Aim To investigate optimal surgical management of pilonidal sinus (PS) in pre-adolescent and adolescent periods in which it is less common.

Methods A retrospective study based on 25 adolescent patients with PS disease that were treated at the Department of Pediatric Surgery, Selcuk University, Konya, Turkey, between 2010 and 2013 was conducted.

Results Among 25 patients with PS disease 17 (68%) were males and eight (32%) females, with a mean age of 16.08 ± 1.2 years. According to the body mass index (BMI), 17 (68%) of the cases were in the normal range, four (16%) of each were overweight, and obese, respectively. Twenty cases (80%) were managed with total excision and primary closure, while five (20%) cases underwent Limberg flap repair. Four patients were managed with the Limberg procedure due to very large sinuses, while a single patient underwent the procedure due to a recurrence following primary repair.

Conclusion Factors that predispose patients to developing PS include an above average BMI, significant body hair, and prolonged time in a seated position. Elevated BMI as a risk factor for PS is a growing concern given the rise in obesity. Although there are various treatment modalities, total excision and primary closure has demonstrated successful outcomes.

Key words: hair, surgery, adolescent, follow-up
INTRODUCTION

Pilonidal sinus (PS) was first described in 1883 by Mayo, and further characterized by Hodges in 1880 (1,2). Pilonidal disease is an acquired skin condition that develops in the sacrococcygeal area or other hair-bearing areas, and is characterized by an epithelialized tract (the sinus) generally containing hair (3,4). Although PS can occur at any age, it is known to be less common during the pre-adolescent and adolescent periods (5). Pilonidal disease can have a dramatic impact on activities of daily living and quality of life (5). In the past, it was thought to be a congenital skin disease, but it is now considered to be an acquired condition that results from burrowing of loose hair shafts into vulnerable skin (5). Although pilonidal disease is not uncommon in adolescents, there are very few publications concerning PS in this age group.

There is an ongoing debate regarding the optimal surgical management of PS. Various approaches to treatment have been suggested, ranging from conservative, nonsurgical treatments, to extensive resections (1,6,7). There is no clear evidence to identify the best method, and the majority of the literature pertains to children (6,7). The fact that there are multiple surgical procedures in use suggests that the optimal technique remains to be determined (6,7).

The aim of this study was to describe our experience with PS in adolescents with specific attention to complications and management strategies.

PATIENTS AND METHODS

Adolescents patients who were treated for PS at the Pediatric Surgery Department, Selcuk University Medicine Scholl Hospital between January 2010 and June 2013 were retrospectively analyzed.

Patients were categorized according to sex, age, body mass index (BMI), amount of body hair, and daily duration of sitting.

Patients were managed with either excision and primary closure or Limberg flap repair. Patients who presented with infected PS were treated 7 to 10 days with antibiotics after drainage, if necessary. The degree of hirsutism was quantified using the Ferriman-Gallwey scale and prolonged sitting was defined as four or more hours per day.

RESULTS

Adolescents with pilonidal disease who presented between January 2010 and June 2013, were evaluated. Seventeen (68%) patients were males and eight (32%) were females, with a mean age of 16.08 ± 1.2.

According to the BMI, 17 (68%) patients were in the normal range (average BMI 24.8), four (16%) were considered overweight (average BMI 28.2), and four (16%) were classified as obese (average BMI 31).

Regarding body hair, 12 (48%) patients had a moderate amount, while 13 (52%) had a high degree of body hair. Eighteen (72%) patients reported spending four or more hours a day in a seated position.

Twenty (80%) patients were managed with total excision and primary closure, while five (20%) underwent Limberg flap repair. The Limberg procedure was chosen for five patients: four had particularly large sinuses and one had a recurrence after initially being managed with primary repair. No recurrences have been identified in follow-up.

DISCUSSION

Pilonidal disease is a common, acquired disease that mainly affects active young adults and adolescents (2). This study is limited to sacrococcygeal pilonidal pathology although the disease process can occur elsewhere, particularly around the finger webbing in hair dressers and shearers and breasts of wool handlers in shearing sheds (2). Hair (wool) insertion is the essential cause of the disease (5). The peak incidence of pilonidal disease is in 15–24 years of age (2). Studies have shown that 38% of PS patients have a family history of pilonidal disease. Caucasians get PS more frequently than other races (8).

In our study 50% of patients had normal body weight and 37% were overweight. Patients with a high body mass index have an increased risk of recurrence after surgery (9). Weight excess may be a risk factor for PS (10,11). It is notable that one patient in our study who had a recurrence after primary closure was overweight. Patients with repeated local trauma and occupations that require prolonged sitting have a higher prevalence of pilonidal disease (10). Of our patients, 68% had normal BMI, the daily sitting rate of more than
four hours was 72%, and more than half of the patients in our series had a high degree of body hair. As the whole patient series in this study consisted of students sitting for extended periods while studying, time seated is considered to be a risk factor. Prolonged local trauma for PS has been shown to be a risk factor (12).

Three factors are thought to combine in the pathogenesis of PS: loose hair, some force causing penetration of hair into the skin, and vulnerability of the skin to insertion of the hair at the natal cleft (13). One hair penetrating the dermis may create an environment in which other hairs can penetrate more easily. The resulting foreign body reaction develops into PS (13). Lifestyle changes may address the first two factors. Hair removal may help, and weight loss results in a natal cleft that is not as deep and has less friction (13). One study demonstrated successful management of pilonidal disease on an outpatient basis, because hospital admissions were decreased by 78% when patients began instituting a conservative strategy that emphasized hygiene and meticulous shaving (14).

There are different treatment approaches, and although medicine treatment is an option, it is not preferred as it takes a long time and its efficacy is hard to establish (14). In medicine therapy for PS the use of phenol has been proposed in the literature (15,16). A disadvantage of using phenol is prolonged treatment. Surgical intervention is initially aimed at removing pits and sinuses, and debriding any infected tissue by excision (17). One large series of 78,924 American soldiers during the Second World War reported hospitalization time of 55 days, mainly due to complications resulting from a wide excision (18). This is because wide excision typically results in large defects that require healing by secondary intention. This resulted in an open wound that was, theoretically, susceptible to further invasion by loose hairs (13). We have used the technique of en bloc excision of the sinus or sinuses with the surrounding healthy tissue down to the presacral fascia and primary closure of the wound. It is an uncomplicated technique that can be easily learned as it does not require the creation of flaps. There are several advantages to primary closure. The procedure is easy to perform and does not require significant experience. As such, it can be performed quickly. In addition, there is little postoperative pain, early wound healing, and an early return to normal activities.

Two of the major complications that can occur after primary closure are wound site infection and wound dehiscence. Neither of these complications, however, occurred in our patient series. The average healing period of PS was 40-60 days following excision or marsupialization and leaving the site completely open. During this period, dressing changes should be performed regularly with the defect expected to heal with granulation tissue. In this case, the result has a poor cosmetic appearance.

When flap methods are compared with primary closure, considerable cosmetic scar tissue develops in the gluteal area. This was demonstrated in the study in which the Limberg flap method was used and displeasure regarding the cosmetic outcome was expressed and considered to be a significant disadvantage (19).

In conclusion, until now, the etiology of pilonidal disease has not been clarified although it has been discussed in many studies (1,2,10,11). In this study, excessive hair growth, obesity, and prolonged sitting have increased the incidence of PS. Adolescents with these risk factors ought to be examined routinely. In surgical treatment, the benefits of primary closure include ease of performance, minimal postoperative pain, early wound healing, and early return to work, with acceptable recurrence rates. Thus, excision and primary closure may be the preferred approach in adolescents with PS.

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REFERENCES


